Rotating Extension Column
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Decrease in Honey Bee Population Impacting Crops

We take a lot of things for granted these days. Things like clean water, a roof over our heads and plenty of food fortunately represent things that most of us don't worry about on a daily basis.

Among other topics of little concern over the years have been honey bees. They have gone about their business of making honey and pollinating many crops while drawing little attention by the casual observer.

Conditions have changed over the past couple of years as beekeepers and farmers have noticed a sharp decline in the honey bee populations. Actually, from the early 70s through the present, numbers of wild honey bees have been declining. Some say that the wild population is now almost absent.

During this same period there was a somewhat gradual decline in the number of colonies maintained by beekeepers. Then in 2006 and 2007 the rate of loss reached an alarming level. For lack of a better name the term "Colony Collapse Disorder" (CCD) was coined to describe this sudden disappearance of so many colonies.

Everyone should be concerned about the plight of the honeybee. In addition to providing honey, they pollinate about $10 billion worth of crops in the U.S. including apples, berries, melons, cucumbers and almonds.

Until recent years many of our Santa Rosa vegetable farms received adequate crop pollination from wild honey bee colonies. During this past season the lack of pollination resulted in the need to rent honey bee hives for placement near their watermelon, squash, cucumber and cantaloupe fields.

Scientists have been scrambling to determine the cause of the honeybee colony collapse disorder ever since it was recognized as a problem. Many theories have been explored including radiation from cell phones or other man-made devices, pesticides, mites, malnutrition and genetically modified crops.

The latest report related to CCD, published in the journal *Science*, states that an association has been found between the disorder and a honey bee virus called Israeli acute paralysis virus.

This study began by collecting 30 colonies with CCD and 21 colonies without CCD from four locations in the U.S. Scientists then checked each group, identifying pathogens to which they had been exposed. In total (both groups), the honey bees were found to harbor six symbiotic types of bacteria and eight bacterial groups, 81 fungi and seven viruses.

The search for potential pathogens was done using a new means of sequencing the genetic material from the healthy and unhealthy bees. This technique allows for an unbiased look at DNA from all organisms present in the bees. To make a long, complex story short, the only pathogen found in almost all colonies with CCD, but not the healthy colonies was the Israeli acute paralysis virus.

This virus was found in 96% of the CCD-bee samples and is the first report of it found in the U.S. It is a dicistrovirus that can be transmitted by the Varroa mite, a common pest in colonies.

This might be a breakthrough in determining the cause of the honeybee colony collapse disorder, but more research is sure to continue. Much of what is known to date has been published. For more information about CCD go to www.ars.usda.gov/is/br/ccd/

Program Announcement: An Alternative Agriculture Twilight Field Day is being offered for anyone interested in the commercial production and marketing of vegetables and other crops. The field day will be held on October 24, 2007 at the West Florida Research and Education Farm in Allentown from 3:00 p.m. until 5:00 p.m. Further information can be obtained by contacting Santa Rosa County Extension Agent Dan Mullins at 850-623-3868 or Robin Vickers, University of Florida, Milton campus at 850-983-5216 ext.113.